



# Fact Sheet

## United States Navy

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## Navy Communications Satellite Programs Mobile User Objective System

### System Overview

The Mobile User Objective System will be an unprotected, narrowband (64 kbps and below) satellite communications system that will support a worldwide, multi-service population of mobile and fixed-site terminal users. Designed to improve upon the capability of the current Ultra High Frequency (UHF) Follow-On (UFO) satellite communications system, MUOS will provide significantly more capacity to the warfighter, particularly to small, disadvantaged terminals.



A soldier from 3rd/187th Infantry 101st Airborne Division out of Fort Campbell, Ky., sets up satellite communications to coordinate with command leadership while the remainder of the soldiers continue to monitor security as part of a search and attack mission in the area of Narizah, Afghanistan. This mission was part of on going operation for Operation Enduring Freedom in Afghanistan.  
(U.S. Army photo by Sgt. Todd M. Roy)

The MUOS will consist of a space segment and multiple ground segments. These segments will provide the communications medium and services for all users. User terminals will be provided by the individual Services while teleports will be procured by the Defense Information Systems Agency.

The Mobile User Objective System space and ground segments will include a network of advanced UHF satellites and the ground infrastructure necessary to manage the information network, control the satellites, and interface with other systems of the Global Information Grid.

Specifically, the Mobile User Objective System will

provide radio frequency links via the satellites for the flow of information between user terminals, including protocols for wireless control and transmission of user information. The network management will feature a government-controlled, priority-based resource management capability that will be adaptable and responsive to changing operational communications requirements. The MUOS will interface with the Department of Defense Teleports to provide access to Defense Information System Network services. For satellite telemetry, tracking, and command, the MUOS will use the existing Integrated Satellite Control System or its follow-on, located at the Naval Satellite Operations Center at Pt. Mugu, California.

During transition from the UFO constellation, the MUOS will serve a user population consisting of a mix of legacy and new terminals. The new terminals will be Joint Tactical Radio System compliant, designed to provide the warfighter on the move with higher data rates and improved link margin. These new terminals will range from handheld micro-terminals to mobile, platform-specific (vehicle, ship, submarine, aircraft) and fixed-site terminals. Users of these terminals will require on-demand communications services that include

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Cpl. Joseph Calebro, U.S. Marine Corps, uses an AN/PSC-3 Satellite Communications Radio to establish communications from the tarmac at Pointe Noire, Republic of Congo, April 9, 1997.  
DoD photo by Airman 1st Class Greg L. Davis, U.S. Air Force.

narrowband voice, fax, low-speed data, alphanumeric short message paging, voice mail, and call waiting – capabilities typical of private land mobile radio systems.

### **System Acquisition**

SPAWAR PMW-146, the Navy Communications Satellite Program Office, has overall responsibility for executing the procurement of Ultra High Frequency communications satellites for the Defense Department. In July 1988, the Navy awarded a fixed-price competitive contract to Hughes Space and Communications (now Boeing Satellite Systems) to build the UFO satellite constellation and place it in orbit. The UFO contract is an innovative implementation of acquisition reform. The Navy issued contract performance objectives and goals that allowed the contractor latitude in choosing commercial off-the-shelf components for the satellite and in selecting the commercial launch services for lift to orbit. In March 1996, the Navy ordered a high-power, high-speed Global Broadcast Service payload to be incorporated into satellites F8 through F10. The last UHF Follow-On satellite, F11, is scheduled to be launched in early fiscal year 2004.

The MUOS program acquisition strategy is structured to deliver the best value system that meets MUOS operational requirements. All three phases planned for the procurement of MUOS utilize full and open competition.

The first phase, a 21-month Concept Exploration phase, was completed in July 2001. Eight industry teams of commercial and Defense Department contractors studied and recommended system concepts and architectures to meet MUOS requirements. Boeing, Globalstar, ICO/Teledesic, INMARSAT, Orbital Sciences, Lockheed Martin, Raytheon, and Spectrum Astro participated in the evaluation of military and commercial concepts.

The second phase, called Component Advanced Development, is planned as a 14-month effort. The Request for Proposals was released in April 2002, with contract award to Lockheed Martin and Raytheon in September 2002. The goals of the Component Advanced Development phase are to reduce risk, complete the system definition, and solidify an architecture prior to awarding the Pre-Acquisition System Definition and Risk Reduction contract with an option for Acquisition and Operations.

The contractors will examine critical technical issues in developing their MUOS architectures and will define their external interfaces. Affordability assessments and recommendations to revise the MUOS Operational Requirements Document will be based on continuous cost-as-an-independent-variable analyses. The Component Advanced Development process will employ technology demonstrations, prototyping, modeling, and simulation to validate technological maturity of components and architectures.

The third phase, Pre-Acquisition System Definition and Risk Reduction with transition into Acquisition and Operations will be one contract planned to achieve system initial operational capability in 2008 and full operational capability no later than 2013. Contract award for this phase is projected for the second quarter of fiscal year 2004.

For further information please visit the Navy Communications Satellite Program Office (PMW 146) website: <http://enterprise.spawar.navy.mil/spawarpublicsite/pd14/pm146/index.htm> or the Space and Naval Warfare Systems Command home page at <http://www.spawar.navy.mil>